



A new species of *Pachytrocha* Kent, 1882 (Ciliophora, Peritrichia: Vaginicolidae)

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Abstract

The peritrich ciliate *Pachytrocha zhytomirensis* n. sp. is described from the sewage treatment system of Zhytomir (Ukraine). The new species is characterized by an elongate, subgeniculate lorica sheltering a single zooid with an annular ridge and a peristomial lip thickened noticeably near the entrance to the infundibulum. When contracting, the upper part of the cell bends toward the wall of the lorica and the inflated edge of the peristomial lip covers the body. The macronucleus is ribbon-like and oriented parallel to the longitudinal axis of the cell. *Cothurnia asymmetrica* Sommer, 1951 is recognized as a synonym of *Pachytrocha cothurnoides* Kent, 1882.

Key words: taxonomy, morphology, species composition, activated sludge

Introduction

The genus *Pachytrocha* Kent, 1882 was described by Kent (1882) for peritrichous ciliates from pond macrophytes. The type species is *Pachytrocha cothurnoides* Kent, 1882 by monotypy (Aescht 2001). Representatives of the genus have a tubular lorica with an external stalk like species of *Cothurnia* Ehrenberg, 1831 and *Pyxicola* Kent, 1882, but differ from the former by possession of an asymmetrical thickening of the cell body and from the latter by absence of a secreted operculum that plugs the aperture of the lorica upon contraction. Subsequently, *P. cothurnoides* was reported by Dunning et al. (1888), Dalla Torre (1891), Fadeev (1929) (*Pachytrocha cothurnioides*) and Naidu (1965), *Pachytrocha* sp. was found by Paviour-Smith (1956). *Pachytrocha* was not recognized as valid by Bütschli (1887-1889), who synonymized it with *Cothurnia*. By contrast, Trueba (1978) synonymized *Pachytrocha* with *Pyxicola* based on the assumption that Kent (1882) mistakenly described individuals of a species of *Pyxicola* that had lost the operculum secreted on the side of the peristome as representatives of *Pachytrocha*.

In the recent extensive monographs on Ciliophora the generic name *Pachytrocha* was cited both as valid name (Lom & Puytorac 1994; Lynn 2008) and as a junior synonym of *Pyxicola* (Jankowski 2007). Guhl and Guhl (1993) and Jankowski (2007) have interpreted records of *Pachytrocha cothurnoides* as young individuals of *Pyxicola* (especially *Pyxicola pusilla* (Wrześniowski, 1866) in which the operculum was not yet developed. Jankowski (2007) also believed that *Cothurnia asymmetrica* Sommer, 1951 is the juvenile form of *Pyxicola*.

Abundant individuals of a hitherto unknown species of loricate peritrich were observed during investigations of peritrichous ciliates in the aeration tanks of the sewage treatment system in Zhytomir, Ukraine in 2007. These ciliates had the enlargement of the peristomial lip that distinguishes representatives of the genus *Pachytrocha*. This paper describes the new species of the genus as *Pachytrocha zhytomirensis* n. sp. Based on our information, the genus *Pachytrocha* was restored and redescribed.